The National Weather Service

Inundation Mapping

Release 1.0

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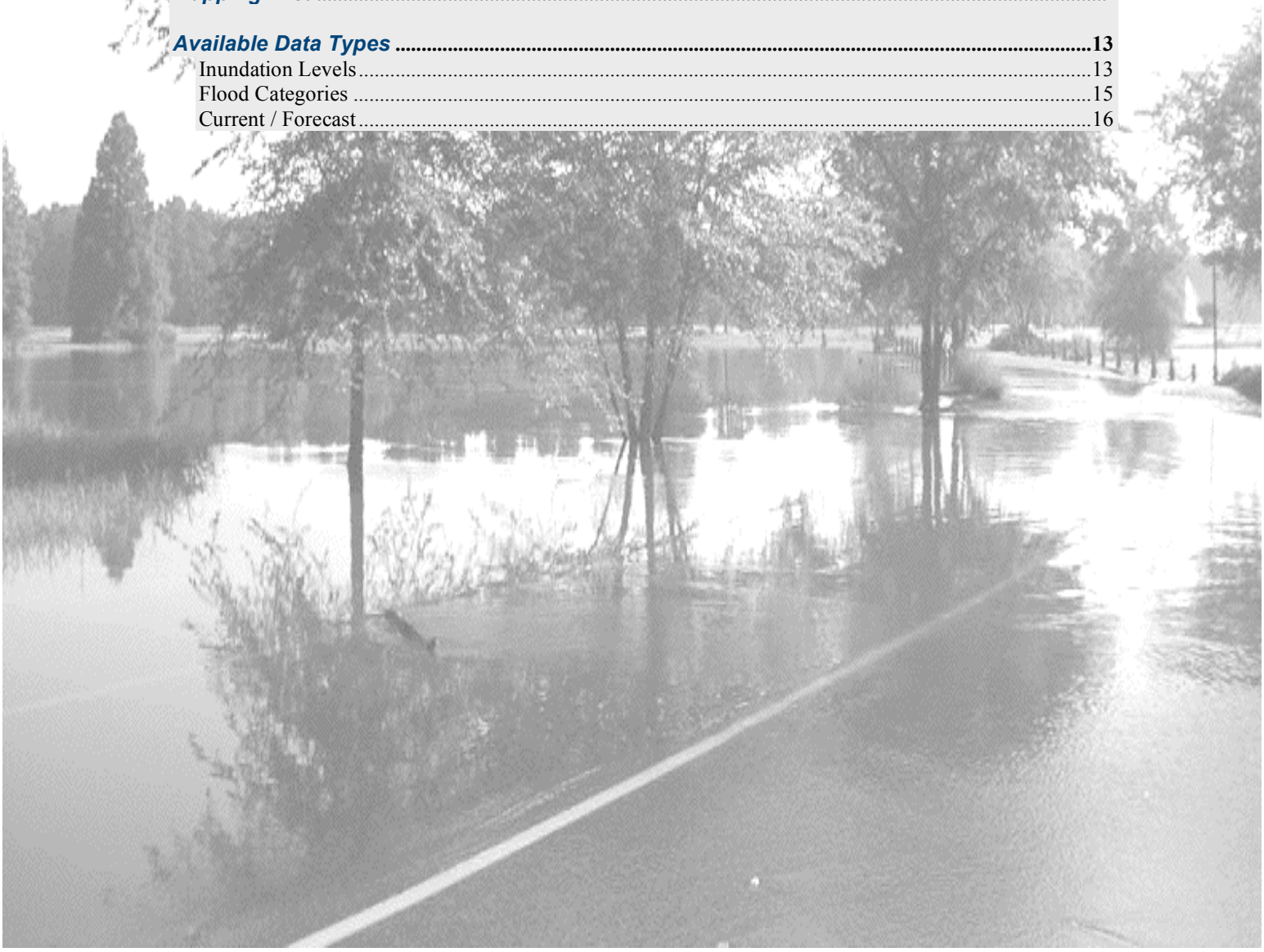
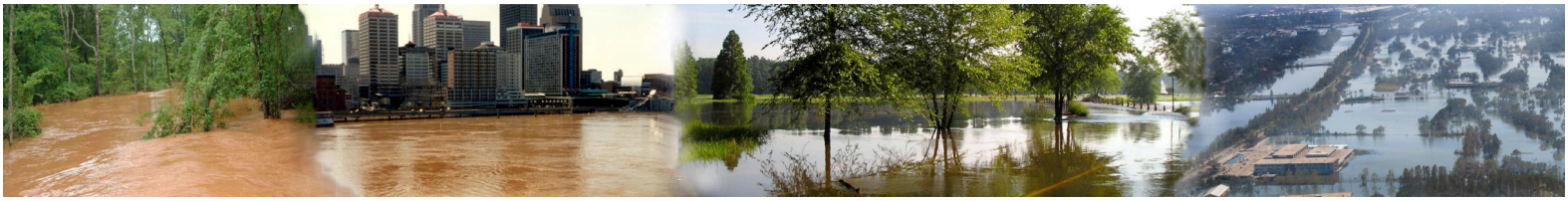


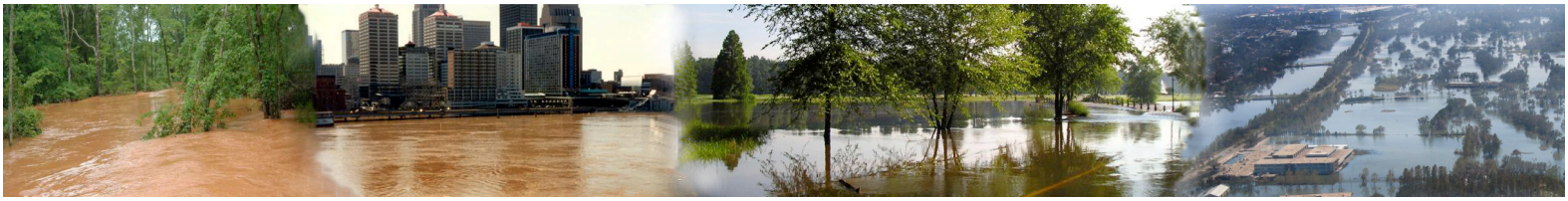


Background

The National Weather Service Inundation Mapping Interface is a web-based tool that provides flood inundation maps that show the extent of flooding expected spatially over a given area. This will indicate when roadways, streets, buildings, airports, etc. are likely to be impacted by floodwaters. The accuracy of the mapping depends on the degree of accuracy of DEM data available for use in the GIS application, plus other factors.

This tool was developed for an initial target audience of the state and local agencies that must make emergency operational decisions during flooding events. However, since the graphics are easy to view, anyone with an interest during these events can make use of the maps, including the Federal Emergency Management Agency (FEMA), the U.S. Geological Survey (USGS), Corps of Engineers (COE), state and local emergency managers, the media, and the general public.

When viewing this data please note that The National Weather Service prepares its forecasts and other services in collaboration with agencies like the US Geological Survey, US Bureau of Reclamation, US Army Corps of Engineers, Natural Resource Conservation Service, National Park Service, ALERT Users Group, Bureau of Indian Affairs, and many state and local emergency managers across the country. Should these data providers be used for a location, links to their agencies can be found on this site.



Web Browser Requirements

To utilize all of the point-n-click and dynamic slider features of the Inundation Mapping Interface, users must have JavaScript enabled in their web browser. If JavaScript is not enabled users will be automatically directed to a non-JavaScript version of the Inundation Mapping Interface.

The Interface

The NWS Inundation Mapping Interface consists of 4 main areas:

- **The Blue Left-hand Data Selection & Navigation Area**
- **The Map Image Type Area**
- **The Map Data & Legend Area**
- **The Mapping Area**

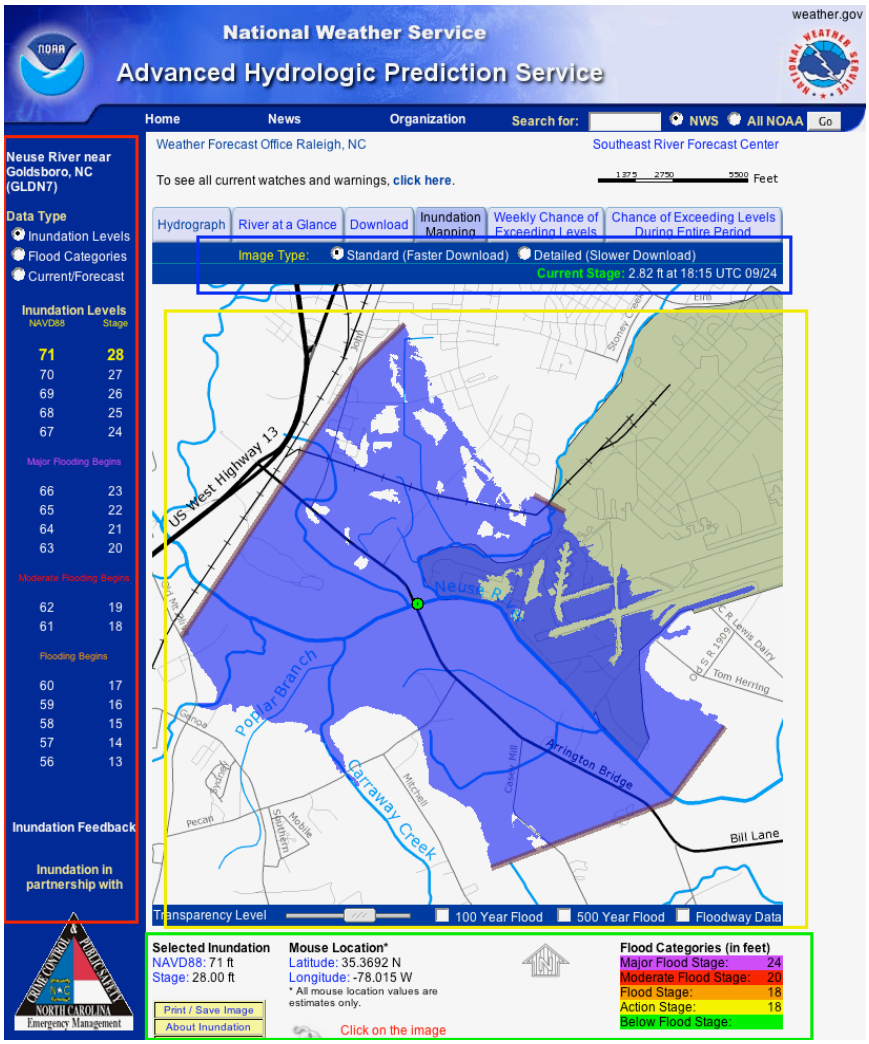
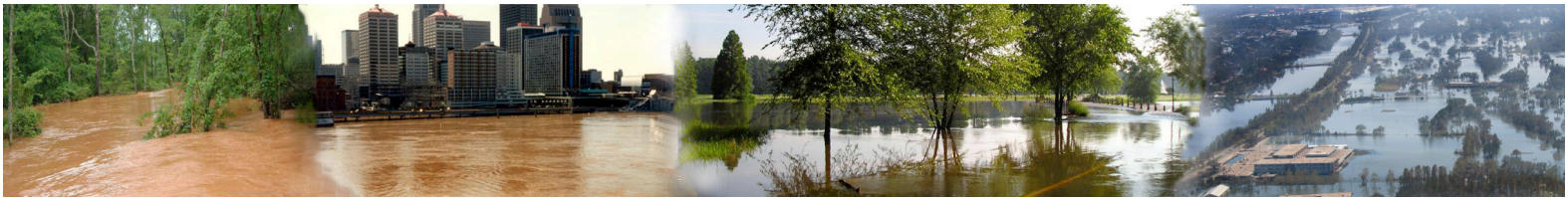


***Figure 1*: The Interface**



Blue Left-hand Data Selection & Navigation Area

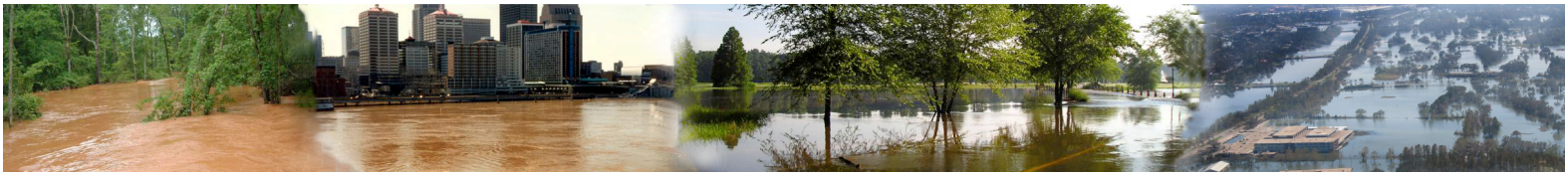
The Blue Left-hand Data Selection & Navigation Area is where users can select to view what data are displayed within the Mapping Interface. There are different types of data available for selection and each of these will be covered later in the document. These are:

- **Inundation Levels (default selection)**
- **Flood Categories**
- **Current/Forecast**

Here users can also use an intuitive point and click interface to select data increments/layers to be viewed within the Mapping Area.

Additionally, users can also select to visit websites of Inundation Project Partners as well choose to participate in a website survey that is designed to help improve the website for the general public.

***Figure 2*: Blue Left-hand Data Selection & Navigation Area**



Map Image Type Area

The Map Image Type Area is where users can select to view different types of background layers to view selected/configured data upon in the Mapping Area. There are two selections available:

- **Standard View**
- **Detailed View**

The Standard View

The Standard View allows users to view maps related to Inundation, Flood Categories, and Current/Forecast on a background layer, which include topographic features such as roads, rivers, railroads etc. This type of background is smaller in data layer content and downloads more quickly than the Detailed View; therefore, this Map Image Type is selected by default. The Standard View can be seen below.

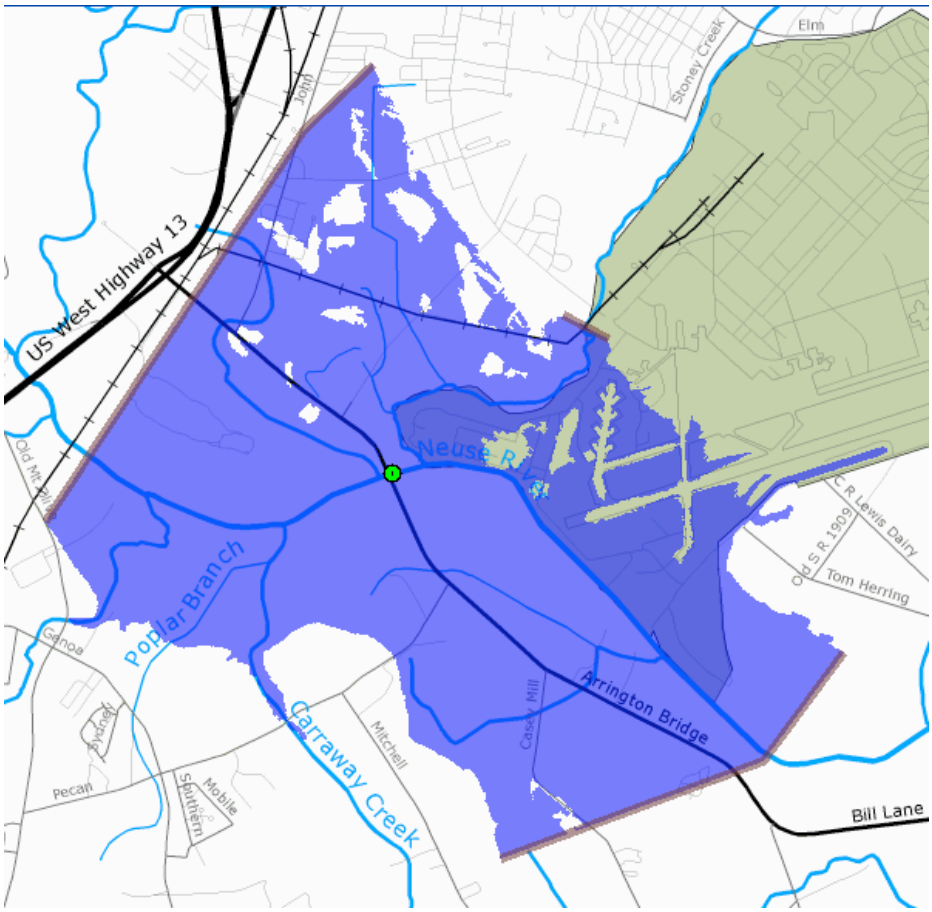
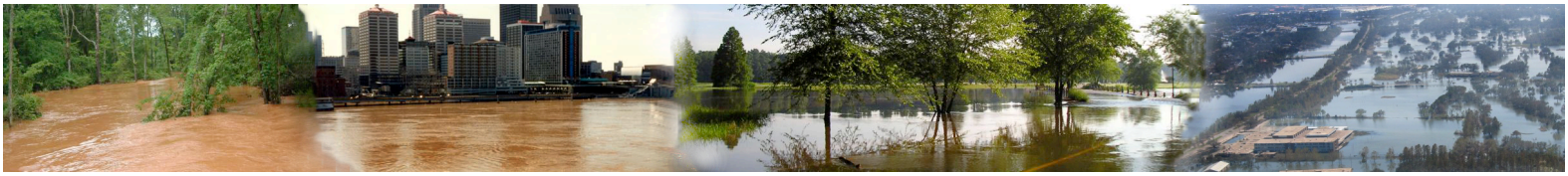


***Figure 3*: The Standard View**



The Detailed View

The Detailed View provides a complex orthographic (aerial) view as the background layer. A unique feature of the Detailed View is the ability for users to “Turn On” Mouse-over Water Depth. Once **this feature is selected**, users can mouse-over the inundation levels on the Mapping Area and view the estimated water depths of those areas. This Map Image Type is more complex in data layer information therefore it may take longer to download than the Standard View.

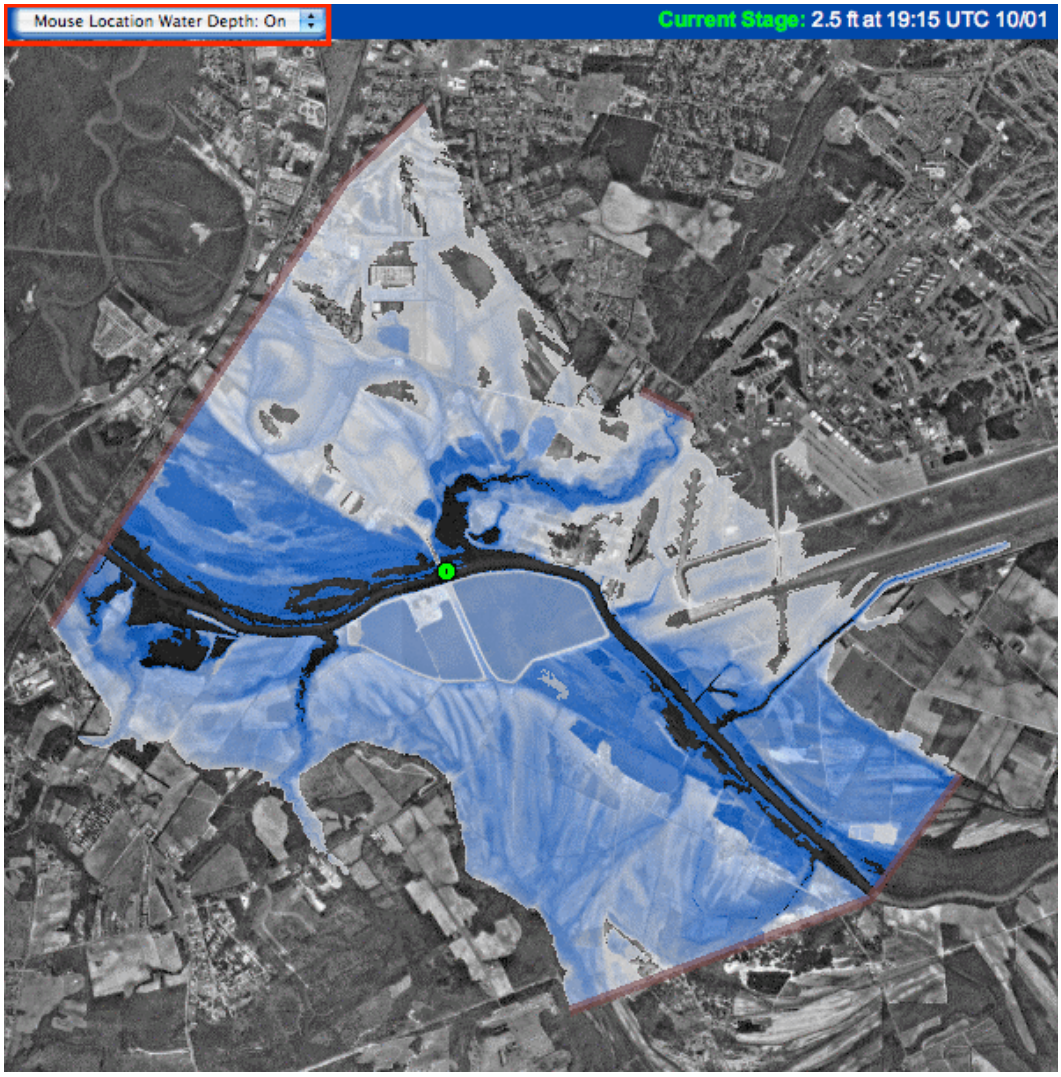
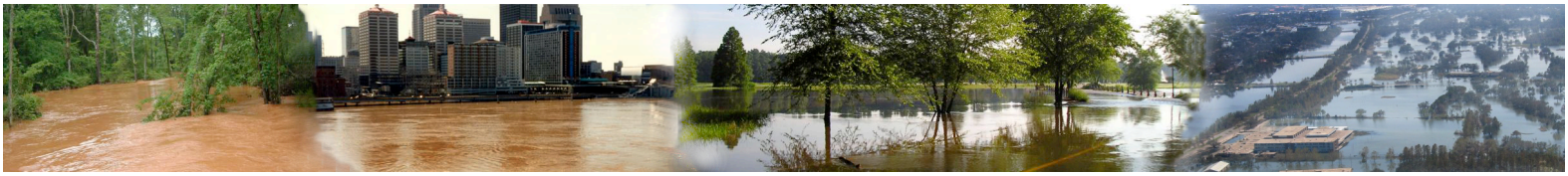


***Figure 4*: The Detailed View**



Map Data & Legend Area

The Map Data and Legend Area contains many informational items about the Inundation Mapping Area/Interface. Here users can view:

- **Selected Level(s) of Inundation**
- **Water Depth, Latitude, and Longitude of Mouse Pointer on Map**
- **Historical Crests for the Gauge Location**
- **Flood Category Legend that contains Gauge Site Specific Information**

As well as these features, this area also contains navigational links to additional inundation data as well as a link to the main page of the HSA.

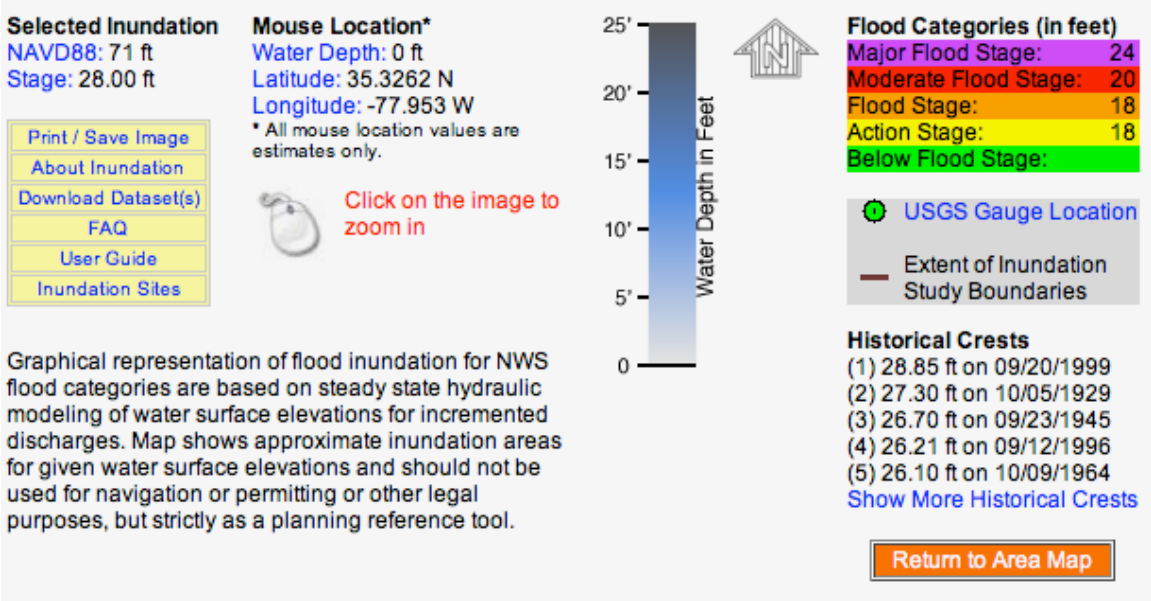
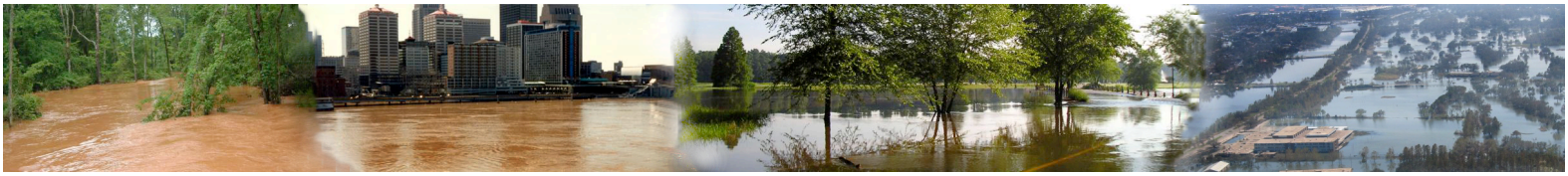


***Figure 5*: Map Data & Legend Area**



Mapping Area

The Mapping Area is where users can view all configured inundation and flood category data. A useful feature of the Mapping Area/Interface is a click-and-zoom tool. Users can select any location on the map, click on that area, then view the selected area more closely. This tool is available on both the Standard and Detailed Views.

An additional feature of the Mapping Area is the ability to select additional DFIRM (Digital Flood Insurance Rate Map) data layers to be displayed on the map. This is done via a group of radio selection boxes located at the bottom of the Mapping Area. The selectable data are:

- **100 Year Flood**
- **500 Year Flood**
- **Floodway Data**

An example of each layer will be shown below in the following examples.

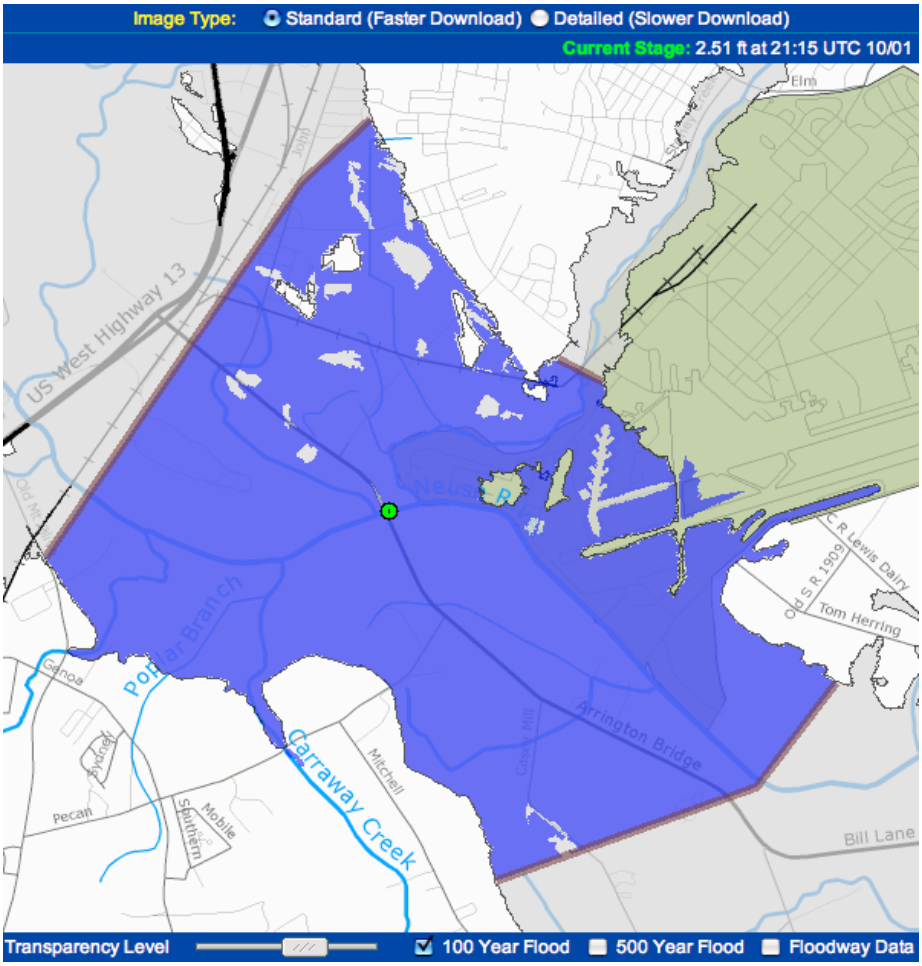
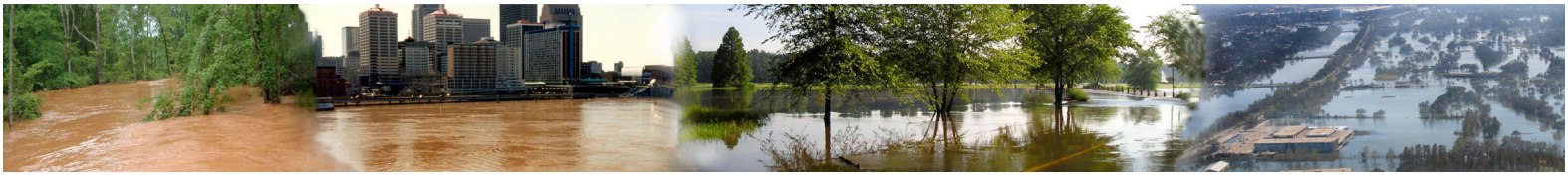


***Figure 6*: 100 Year Flood**



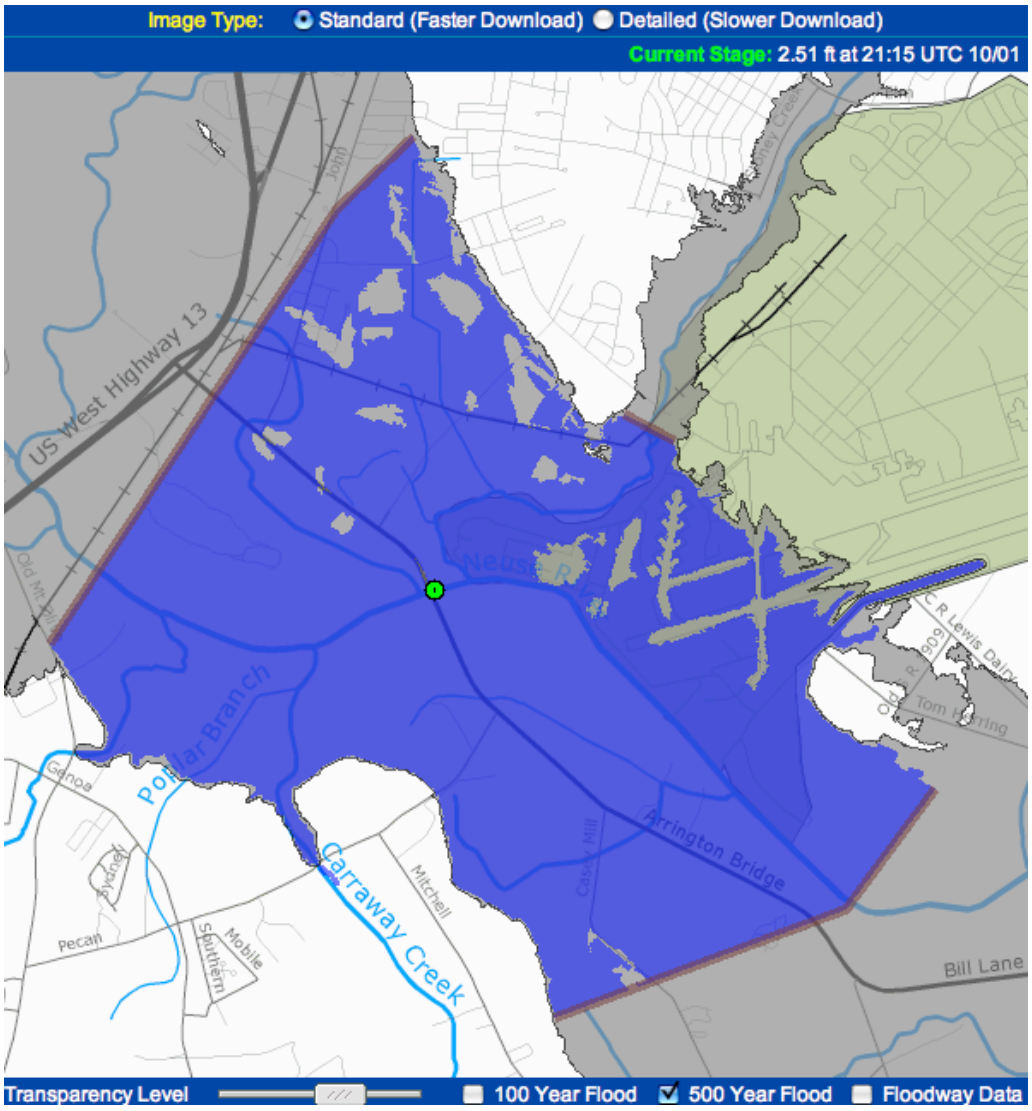
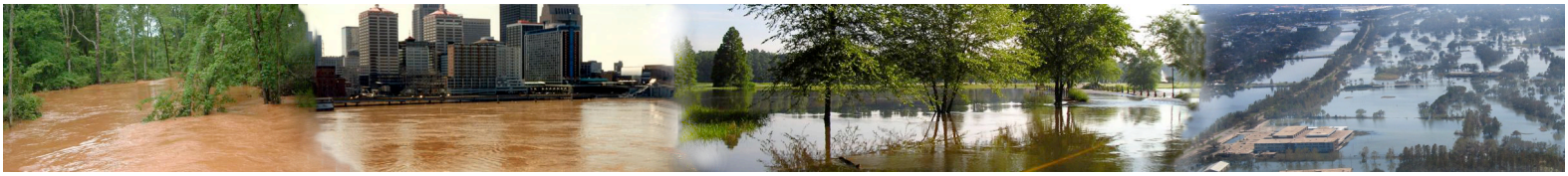


***Figure 7*: 500 Year Flood**

100 and 500 Year Flood Data as defined by FEMA are:

The 100-Year Flood is defined as the flood elevation that has a 1-percent chance of being equaled or exceeded each year.

The 500-Year Flood is defined as the flood elevation that has a 0.2 percent chance of being equaled or exceeded each year.



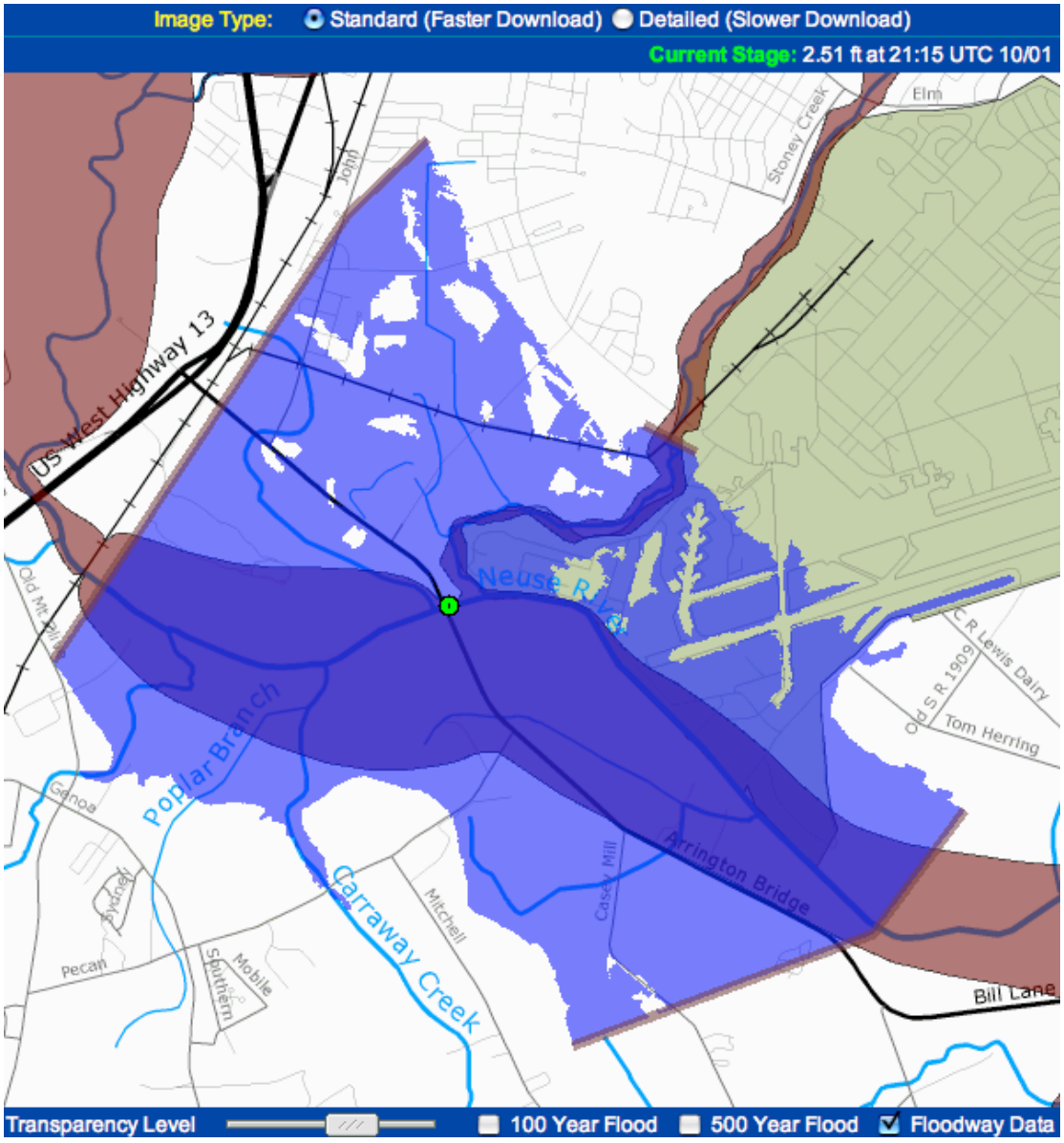
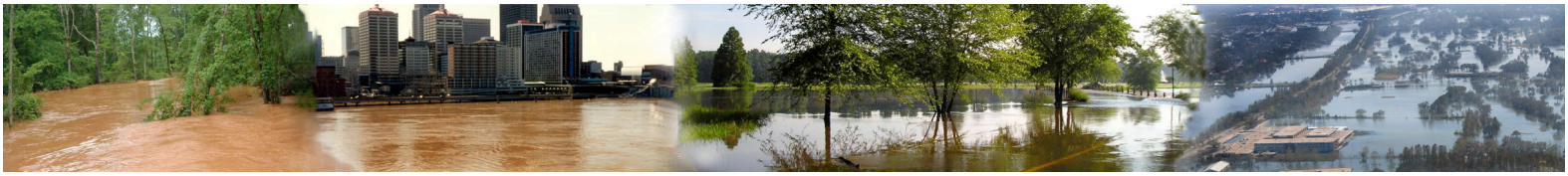


***Figure 8*: Floodway Data**

Floodway as defined by FEMA is:

"Floodway means that portion of the floodplain which is effective in carrying flow, within which this carrying capacity must be preserved and where the flood hazard is generally highest, i.e.,where water depths and velocities are the greatest. It is that area which provides for the discharge of the base flood so the cumulative increase in water surface elevation is no more than one foot."



The final feature to be showcased in the Mapping Area is the Transparency Control Slider. This feature allows users to move a JavaScript based slider to effectively raise or lower the default layers' opacity; default layers being the Flood Categories and Inundation Levels. This feature does not affect 100 Yr, 500 Yr, and Floodway Data.

Move the Transparency Control Slider to the left to lessen opacity and to the right to increase opacity.

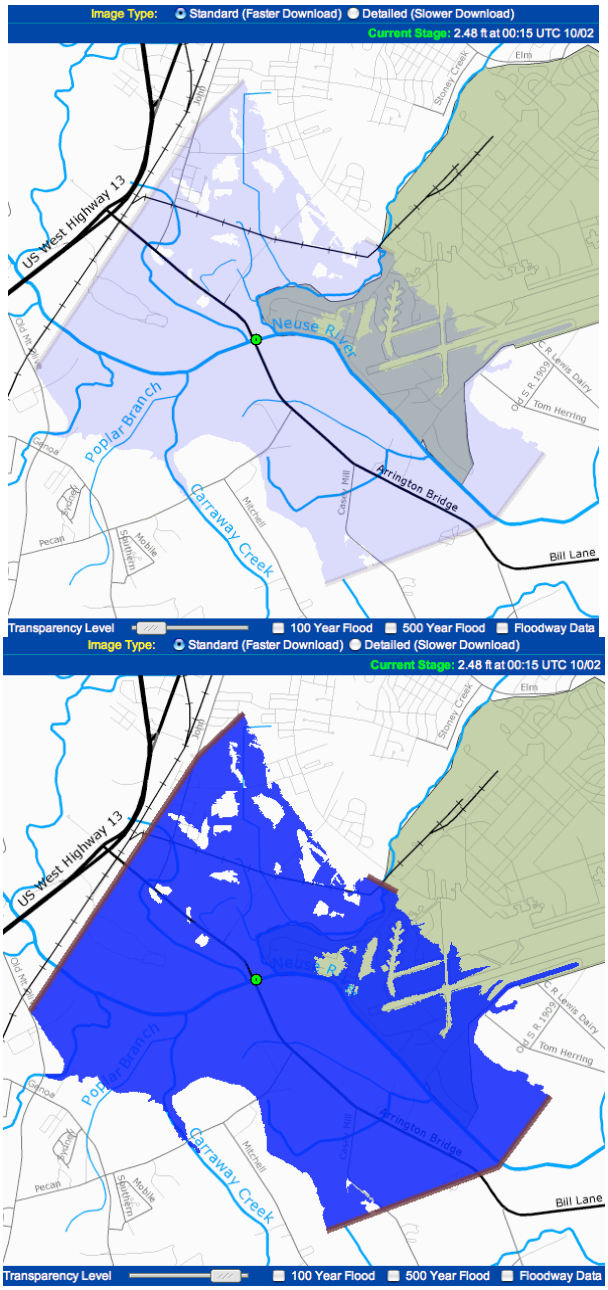
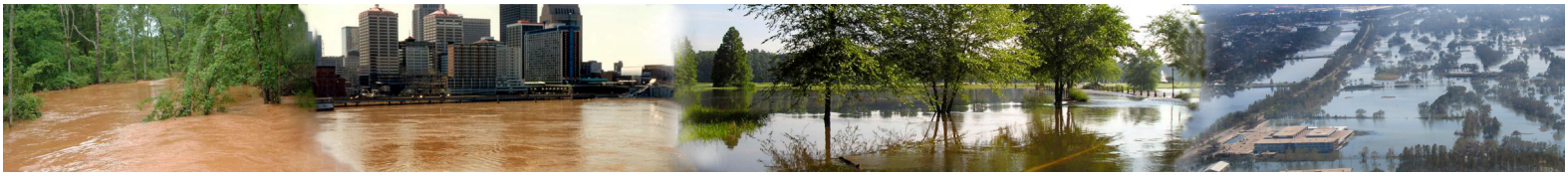


***Figure 9*: Transparency Control Slider**



Available Data Types

Inundation Levels

By selecting the data type, entitled Inundation Levels, users will see different levels of inundation (NAVD88 or NGVD29 depending upon administrative configuration) via the point-and-click interface located in the Blue Left-hand Data Selection & Navigation Area. In the Standard View, Inundation Levels are represented via a singular colored layer. In the Detailed View, Inundation Levels are represented via multicolored layers that represent different water depths. Also the Detailed View also possesses the ability to provide users with water depth information via the mouse-over feature.

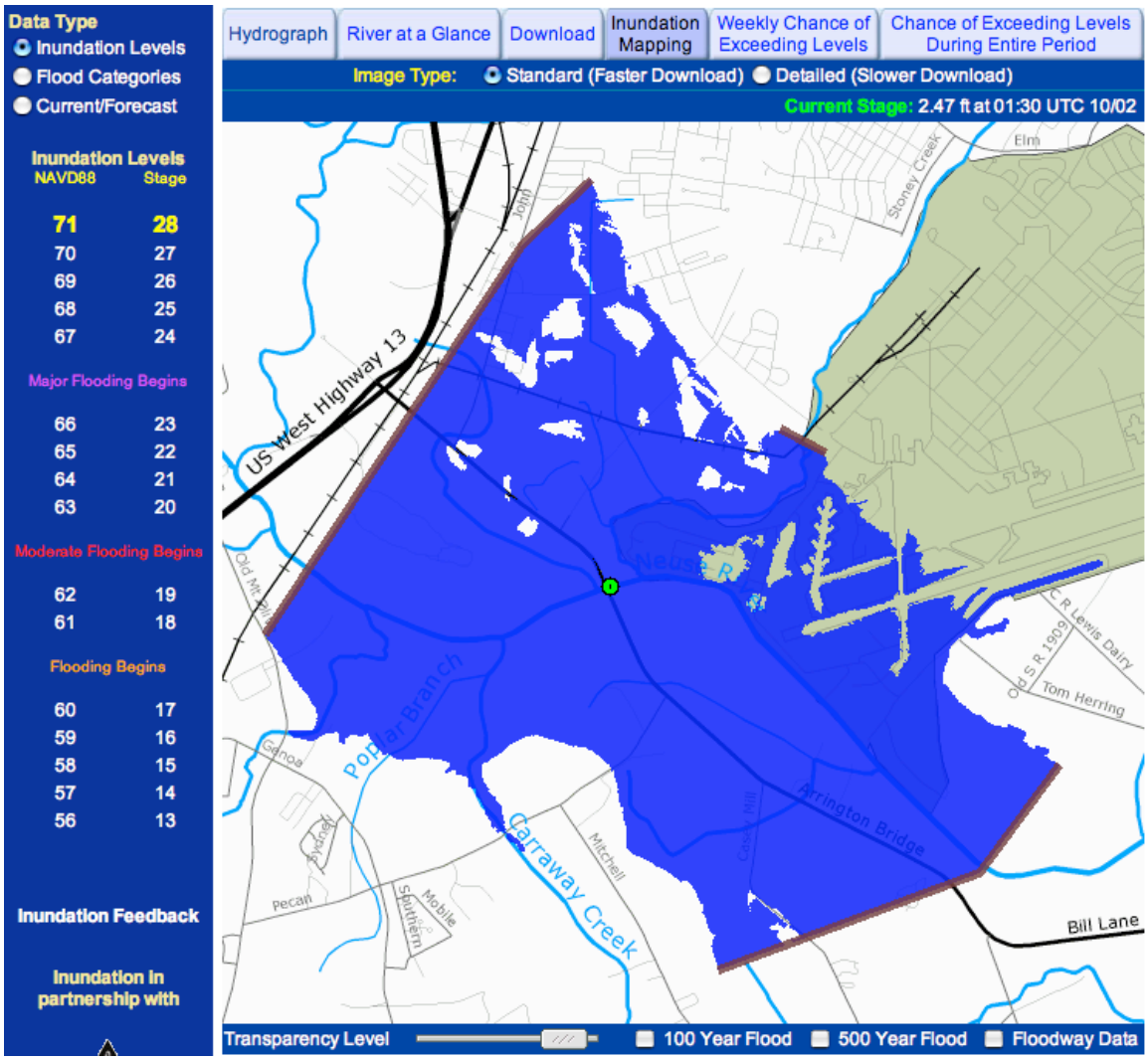
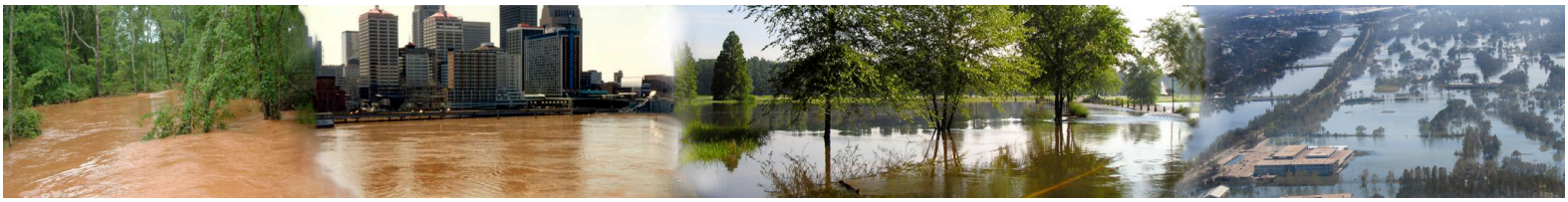


***Figure 10*: Inundation Levels – Standard View**



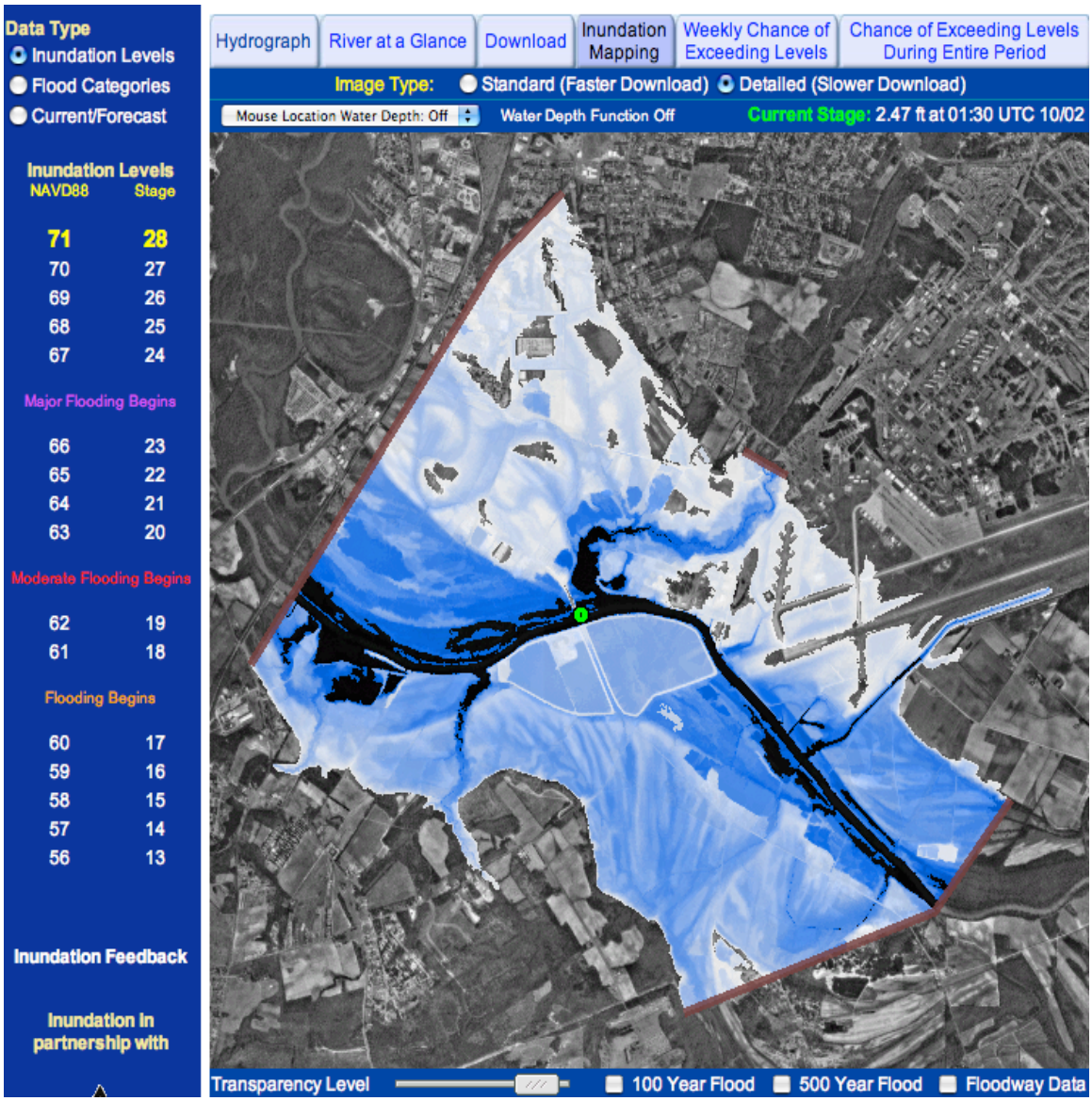
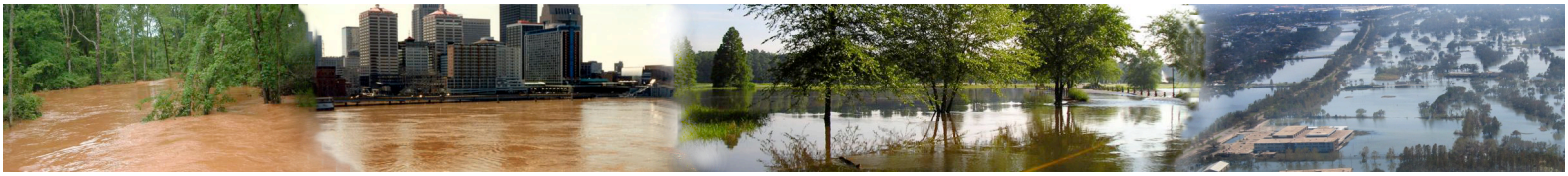


***Figure 11*: Inundation Levels – Detailed View**



Flood Categories

By selecting the data type, entitled Flood Categories, users will see different colored categories of flooding, ranging from below flooding to major flooding. The extent of inundation depicted in aerial view will represent the maximum level of inundation for their respective categories. Flood category(s) can be displayed one at a time or overlapped for a composite image. To allow for overlaps, check the box which states "Allow Overlapping Flood Category Layers" and select the flood categories.

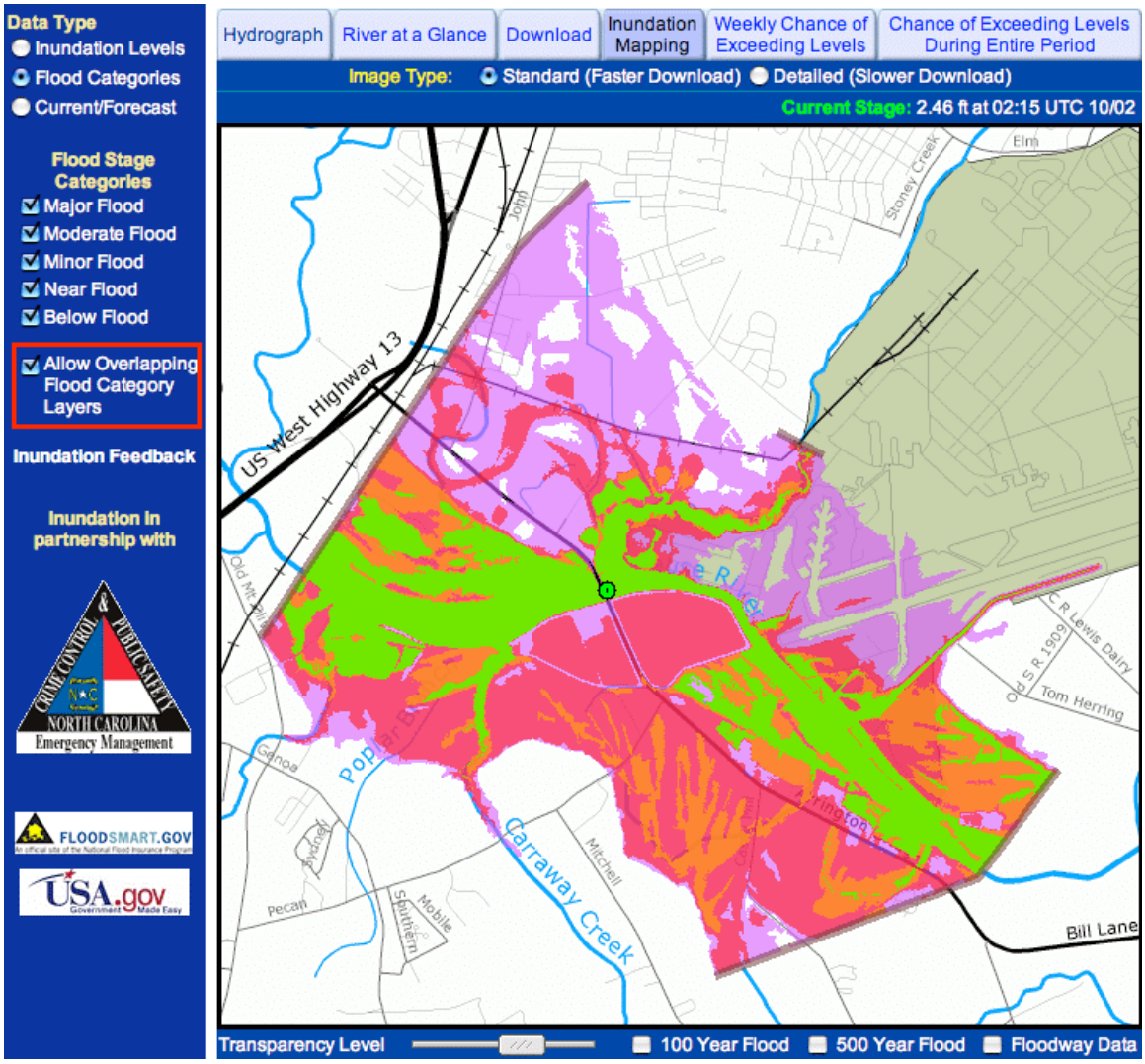
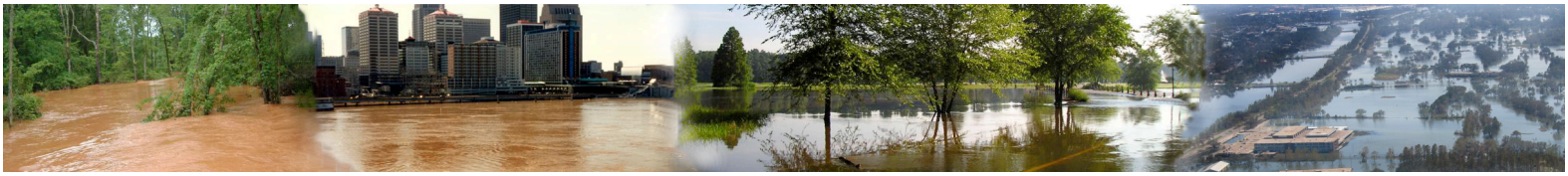


***Figure 12*: Flood Categories w/ All Category(s) Layers Displayed**



Current / Forecast

By selecting the data type, entitled Current/Forecast, users will minimally see the current forecast, listed numerically in the left panel and also underneath the folder tabs. If the current forecast is close to flooding or the assumptions used in developing the inundation maps with hydraulic modeling and geospatial analysis are valid, inundation forecast(s) will be provided. Users can view the range of inundation forecasts for the given time via point-and-click interface located in the Blue Left-hand Data Selection & Navigation Area.

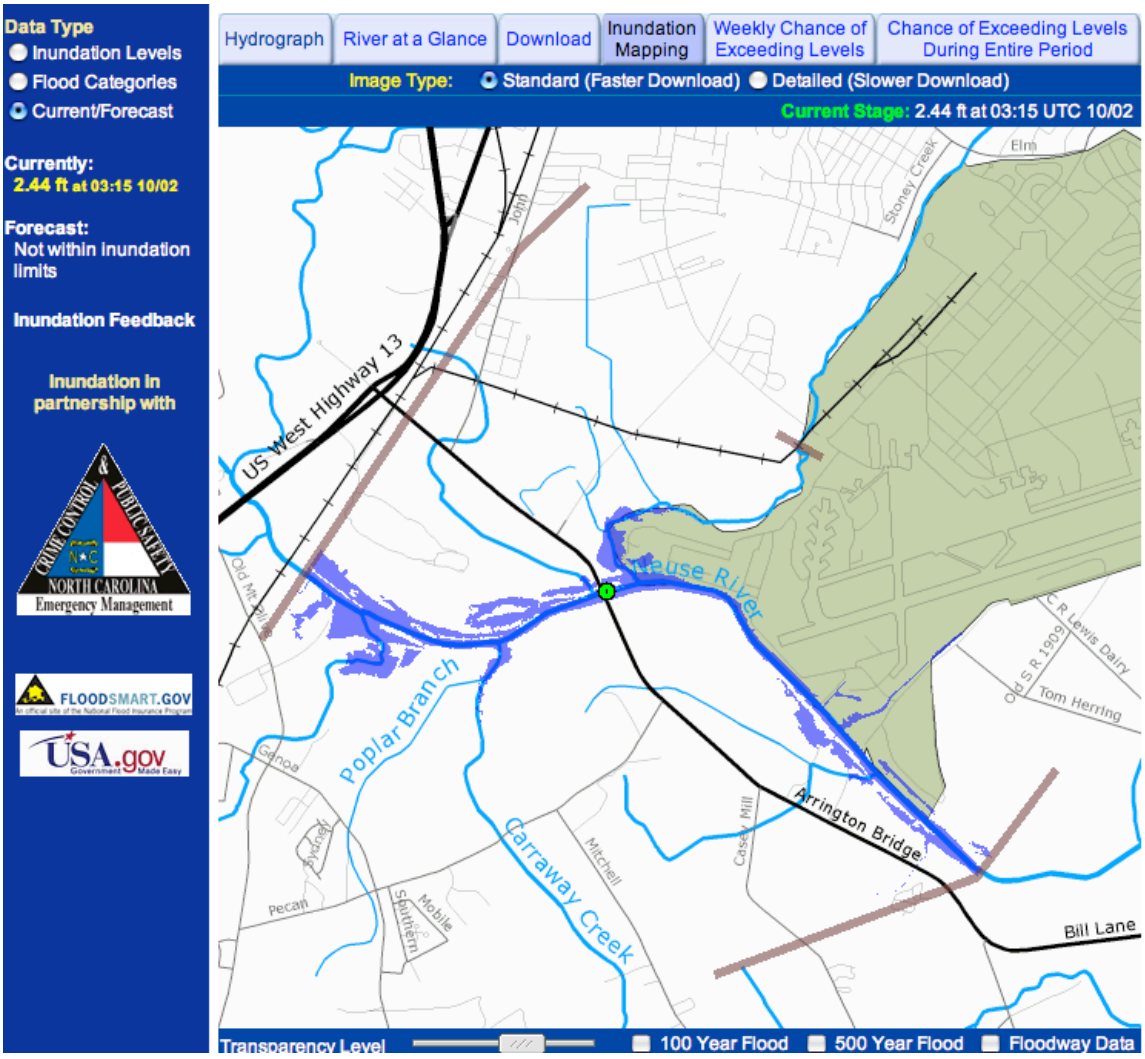


***Figure 13*: Current / Forecast Inundation Levels**